

WHAT IS CLAIMED IS:

1. A method for removing gas bubbles from a feed material to an ink-jet material dispensing system, the method comprising the steps of:

delivering said feed material to a bubble removal vessel having a top, a bottom, and opposing sides;

allowing gas bubbles in said feed material to rise to said top of said bubble removal vessel;

removing bubble free feed material from a point near said bottom of said bubble removal vessel;

feeding said bubble free feed material to an ink-jet print head;

removing gas from said top of said bubble removal vessel by venting said bubble removal vessel.
2. The method of claim 1 wherein said ink-jet material dispensing system is a selective deposition modeling system for producing three-dimensional parts.
3. The method of claim 1 wherein said ink-jet dispensing system is a two-dimensional system for producing conventional two-dimensional images.
4. The method of claim 2 wherein said feed material is a support material for supporting a build material during a build process.

5. The method of claim 2 wherein said feed material is a build material for building parts during a build process.

6. The method of claim 1 wherein said gas removing step is performed by periodically venting said bubble removal vessel responsive to a liquid level measurement in said bubble removal vessel.

7. An apparatus for removing gas bubbles from an ink-jet material dispensing system comprising;

a bubble removal vessel comprising an inlet port, an exit port, a level sensor, a hollow interior, and a vent port;

means for feeding a feed material to said inlet port;

means for removing said feed material from said exit port for delivery to an ink-jet print head;

means for venting said gas bubbles from said vent port.

8. The apparatus of claim 7 wherein said means for venting said gas bubbles from said vent port comprises;

a vent port seal connected to an actuating device controlled by a signal from said level sensor.

9. The apparatus of claim 7 wherein said exit port is in fluid flow communication with an ink-jet print head, and is located below said inlet port to ensure the removal of gas bubbles.

10. The apparatus of claim 7 wherein said bubble removal vessel includes an internal mesh filter for filtering of micro bubbles from said feed material:
11. A solid freeform fabrication apparatus for forming a three-dimensional object in a layerwise fashion by dispensing at least one material, the apparatus comprising:
 - a build environment having a build platform for supporting the three-dimensional object while it is being formed;
 - at least one dispensing device adjacent said build platform for dispensing said material to form layers of the three-dimensional object;
 - a motion means for respectively moving said dispensing device and said build platform with respect to each other;
 - means for normalizing the layers of said dispensed material thereby producing waste material;
 - a computer controller for receiving object data descriptive of the three-dimensional object and for processing the data and controlling the apparatus when forming the three-dimensional object;
 - a material delivery means for receiving and delivering said at least one material to said dispensing device;
 - a waste removal means for depositing said waste material in a waste receptacle;

wherein said material delivery means comprises;

an apparatus for removing gas bubbles from said at least one material comprising;

a bubble removal vessel comprising an inlet port, an exit port, a level sensor, and a vent port;

means for feeding a feed material to said inlet port;

means for removing said feed material from said exit port for delivery to said dispensing device;

means for venting said gas bubbles from said vent port.

12. The apparatus of claim 11 wherein said bubble removal vessel includes an internal mesh filter for filtering of micro bubbles from said feed material.